

BOOK REVIEWS

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Asa Fitch and the Emergence of American Entomology: With an Entomological Bibliography and a Catalog of Taxonomic Names and Type Specimens.—Jeffrey K. Barnes. The University of the State of New York, Albany, New York State Museum Bulletin No. 461, 1988.

This is an admirable biography of “the first salaried professional entomologist in the United States [whose] career established the model for professional entomologists in the civil service.” (iii) Commencing in 1854, Fitch’s reports as New York State Entomologist established the problem centered approach which was followed by subsequent government entomologists. By the close of his career in the 1870’s, Fitch had amassed the largest collection relating to agricultural entomology in the country.

Jeffrey Barnes, an employee of the New York State Museum, wrote this biography on the Sesquicentennial of the New York Geological and Natural History Survey (1836–1986). He utilized his intimate knowledge of the political and institutional developments of the New York survey, the state museum, the state cabinet, and other New York institutions to explain Fitch’s achievements within the scientific, educational, and agricultural context of the state and the nation. Drawing upon primary sources such as the Fitch correspondence and diaries housed in the archives of the Sterling Memorial Library of Yale University, the Museum of Comparative Zoology, the New York State Museum, plus extensive reading of the agricultural press, Barnes strikes a judicious balance in his discussion of Fitch the individual and Fitch the participant in American agricultural change and scientific advancement.

The biography adds significant new information to what was known of Fitch from standard biographical sources like Arnold Mallis, *American Entomologists*. For example, Fitch’s appointment in 1854 as entomologist of the New York State Agricultural Society has often been cited as the first instance of a salaried “professional” entomologist in the United States. Barnes’ explanation of the appointment and the developments preceding it make it clear that Fitch’s activities in agricultural reform—specifically his agricultural survey of Washington County—must be seen as the prototype for the investigation of insect pests in the United States.

The most puzzling aspect of Fitch’s life is his relative lack of contact with other American entomologists who organized their discipline. Fitch had little contact with the Entomological Society of Pennsylvania in the 1840’s, the American Entomological Society in the 1860’s, and the Entomological Club of the American Association for the Advancement of Science in the 1870’s. Among American entomologists, who were typically prolific letter writers, Fitch was notorious for leaving letters unanswered. Toward the end of his career, Fitch received visits from C. V. Riley, J. A. Lintner, and P. R. Uhler (1870) and John H. Comstock (1873) who wished to learn more about him and his collection, yet even these visits led to no lasting contact. Fitch, the pioneer, remained the loner among his colleagues. Barnes explains that Fitch’s neighbors’ perceived him as the eccentric “bug catcher of Salem,” but he could perhaps have also explained Fitch’s lack of involvement with other entomologists.

Of special interest to entomologists are the two appendices which list Fitch's entomological publications and his contributions to entomological taxonomy. Barnes also discusses the unfortunate dismemberment and loss of much of Fitch's extensive collection.

We need more biographies like this one. Charles V. Riley, Benjamin D. Walsh, Asa Spring Packard, and John L. LeConte come to mind as major figures in nineteenth century American entomology for whom we need scholarly biographies.—*Conner Sorensen, University of Alaska Southeast, 11120 Glacier Highway, Juneau, Alaska.*

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Insect Flight: Dispersal and Migration.—W. Danthanarayana, ed. 1986. Springer-Verlag, Berlin.

This collection of papers covers a wide variety of topics on insect migration by flight, ranging from biochemical and physiological to ecological and evolutionary. By presenting viewpoints from very different perspectives, this volume succeeds in providing a more holistic view of the field. My only criticism is that care was not taken to make all papers accessible to as wide an audience as possible. There is a tendency to forget that technical terms, such as “hypertrehalosemia,” may not be familiar to non-physiologists, or that many of us do not know how to interpret a radar photo.

On the positive side, the volume is permeated with awareness that field studies are essential for understanding insect migration. As Taylor notes (Chap.20), “migration is not easy to create indoors.” A particularly good example of how lab studies, field behavior observations, and radar tracking can complement each other in presenting a unified picture of migration is found in Gatehouse's chapter on the African armyworm (Chap. 9). Development of radar technology is responsible for many recent advances in our understanding of insect migration under natural conditions. This is attested by the fact that results from radar tracking are used in most chapters to illustrate one point or another, while three chapters (6, 13, and 16) are exclusively dedicated to it.

Another recurring theme throughout the book is that insect migration is an adaptation for dealing with environments that vary in time and space. Gatehouse (Chap. 9) argues that rigid genetic determination of propensity to migrate evolves not when reliable environmental cues are absent, but when they are irrelevant. This situation may arise in a species with ubiquitous host plants, since the balance between the costs of staying and leaving is in favor of the latter, especially if the species is subject to heavy mortality from natural enemies. In a similar vein, Dixon and Howard (Chap. 10) review polymorphism in migratory propensity exhibited by many aphids. They show that this polymorphism among the members of a clone is programmed.

While subscribing to the view that insect migration represents an adaptive syndrome, Dingle (Chap. 2) nevertheless cautions that the knowledge of evolutionary and genetic aspects of insect migration is still in embryonic form. For example, we do not know why migrants are not selected out of many “pied paper” Lepidoptera (these insects migrate north in the spring, but are caught by winter before they can migrate south). Gibo (Chap. 12) treats the famous exception to this rule, the monarch